

**Environmental Assessment  
Owego Elementary School  
Facility Replacement Project**

**Village of Owego, Tioga County, New York  
FEMA-4031-DR-NY**

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**FEMA**

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## **LIST OF ACRONYMS**

|          |   |
|----------|---|
| amsl     | Above Mean Sea Level  |
| ACHP     | Advisory Council on Historic Preservation                             |
| AD       | Area of Disturbance   |
| APE      | Area of Potential Effect  |
| ASTM     | American Society for Testing and Materials                            |
| BFE      | Base Flood Elevation  |
| CEQ      | Council on Environmental Quality                                      |
| CFR      | Code of Federal Regulations   |
| EA       | Environmental Assessment  |
| DRP      | Data Recovery Plan  |
| EIS      | Environmental Impact Statement  |
| EPA      | Environmental Protection Agency                                       |
| ESA      | Endangered Species Act  |
| EO       | Executive Order   |
| FEMA     | Federal Emergency Management Agency                                   |
| FIRM     | Flood Insurance Rate Map  |
| FONSI    | Finding of No Significant Impact                                      |
| MOA      | Memorandum of Agreement   |
| NAAQS    | National Ambient Air Quality Standards                                |
|          | NEPANational Environmental Policy Act                                 |
| NFIP     | National Flood Insurance Program                                      |
| NHP      | Natural Heritage Program  |
| NHPA     | National Historic Preservation Act                                    |
| NPDES    | National Pollutant Discharge Elimination System                       |
| NRHP     | National Register of Historic Places                                  |
| NRCS     | Natural Resources Conservation Service                                |
| NYS      | New York State  |
| NYSBC    | New York State Building Code  |
| NYSDEC   | New York State Department of Environmental Conservation               |
| NYSOEM   | New York State Office of Emergency Management                         |
| NYSOPRHP | New York State Office of Parks, Recreation, and Historic Preservation |
| OES      | Owego Elementary School   |
| PAF      | Public Archaeology Facility   |
| SEQRA    | State Environmental Quality Review Act                                |
| SF       | Square Foot   |
| SHPO     | State Historic Preservation Office                                    |
| SPDES    | State Pollutant Discharge Elimination System                          |
| SWPPP    | Stormwater Pollution Prevention Plan                                  |
| USACE    | United States Army Corps of Engineers                                 |
| USC      | United States Code  |
| USDA     | United States Department of Agriculture                               |
| USFWS    | United States Fish and Wildlife Service                               |
| USGS     | United States Geological Survey                                       |

## **1.0 Introduction**

The Owego Apalachin Central School District, herein referred to as the “Subgrantee”, has requested funding from the U.S. Department of Homeland Security-Federal Emergency Management Agency (FEMA) Public Assistance Program to construct a new elementary school within the community to replace the function lost due to substantial storm damage of an existing facility. The Village of Owego in Tioga County, New York experienced storm damages and flooding from Tropical Storm Lee that occurred September 7, 2011 to September 11, 2011. The storm incident period was declared a major declaration by President Barack H. Obama on September 13, 2011 (amended September 23, 2011). Federal public assistance was made available to affected communities and certain nonprofit organizations per FEMA 4031-DR-NY and in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974 (42 U.S.C. 5172), as amended. The Grantee for the proposed action is the New York State Office of Emergency Management. The FEMA project worksheet reference number is 4031-DR-NY PW#02002.

The Owego Elementary School, located at 1 Christa McAuliffe Lane in the Village of Owego, experienced flooding on the first floor as a result of the declared incident. The damages rendered the facility unsafe and it was abandoned. As a temporary facility operations measure, the Subgrantee established educational services at an existing Owego Elementary East (L W West) located 15 miles away in Endicott, New York. FEMA has estimated that the cost to repair the original school facility would exceed 50 percent of the estimated cost to reconstruct the structure. Therefore, the facility is eligible for replacement in accordance with 44 Code of Federal Regulations (CFR) Part 206.226. The proposed action would demolish the original facility and reconstruct the new facility on the same property with use of fill materials to elevate the structure above the 100-year floodplain/Base Flood Elevation (BFE) and the 500-year floodplain elevation. The facility size would be increased from 70,000 square feet to 115,000 square feet. Demolition of the existing school began in June 2013. Construction of the new facility is projected to be completed in January 2015. The proposed project would restore educational services back to the Village of Owego.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President’s Council on Environmental Quality regulations to implement NEPA (40 CFR Parts 1500-1508), and FEMA’s regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider potential environmental impacts before funding or approving actions and projects.

The purpose of this EA is to analyze the potential environmental impacts of the proposed reconstruction of a new elementary school. This document serves as written communication of the environmental impacts of the proposed construction of the facility, including analysis of the project alternatives and identification of impact minimization measures. The EA also serves as written communication of the environmental evaluation for public and interested party comment. Public involvement is a component of NEPA to inform an Agency’s determination of whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

## **2.0 Purpose and Need**

The purpose of the proposed project is to fully restore an elementary school facility and educational services within the community of Owego. The need for the project is to return educational services to the affected community due to the substantial storm damage and loss of the original facility during Tropical Storm Lee. Although students are receiving educational services at Owego Elementary East; this is a temporary arrangement. Over time, Owego Elementary East may experience overcrowding from the influx of new students from the Village of Owego. A safe and durable facility in the Village of Owego is needed for students to attend classes close to home. Most students live within a two mile radius of the damaged facility. Students are now transported 15 miles each way to attend classes in Endicott. Transporting students from Owego to Endicott increases the risks that children may be injured or harmed from traffic-related incidents. Transporting students also increases the Subgrantee's overall operating expenses (additional buses, additional drivers, more fuel, longer travel time, etc.) which then affects the entire community.

## **3.0 Alternatives**

NEPA requires the analysis of practicable alternatives as part of the environmental review process for the proposed project. Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. The No Action Alternative is used to evaluate the effects of not providing Federal financial assistance for the project, thus providing a "without project" benchmark against which "action alternatives" may be evaluated.

### **3.1 Site Alternatives Considered and Dismissed**

As the original facility was determined to be beyond repair, the Subgrantee considered and evaluated four alternatives to construct a new elementary school facility involving three different real estate properties. Project criteria was identified and used as a comparison evaluation tool for final site selection. Project criteria included such parameters as: site had to be available for purchase or owned by the Subgrantee; minimum 10-acre parcel size; accessible to major utilities; and, located within a two mile radius of the Village of Owego. Four alternatives met the minimum criteria:

- Site #1A: The existing school site (1 Christa McAuliffe Lane, Owego) built on fill
- Site #1B: The existing school site (1 Christa McAuliffe Lane, Owego) built on stilts and fill
- Site #2: The northern most area of the Owego school complex (athletic and open fields)
- Site #3: The State Route 434 site owned by the Owego Industrial Development Agency

Through the Subgrantee's evaluation process, Sites #2 and #3 were dismissed from further analysis in this EA. The Subgrantee summarized the main reasons for dismissing these sites in the narratives below.

Site #2: This parcel is part of a larger 100+ acre property owned by the Subgrantee. This property is developed with the Owego Apalachin Middle School (3 Sheldon Guile Boulevard), Owego

Free Academy (1 Sheldon Guile Boulevard), Owego Elementary School to be demolished, a maintenance building, and portions of the associated road network, parking lots and athletic fields. Most of the 100+ acre property is located within the 100-year and 500-year floodplain. The northern most area of this parcel is primarily composed of athletic fields and open space areas. This site, however, has some unique aspects to consider. First, only 3.5 acres of the area are located outside the 100-year floodplain. The proposed size of the new elementary school and associated ancillary facilities would not fit within the geographic shape of the section that is outside the floodplain. Second, the area has an active rail line adjacent to the east that would pose a potential safety risk to students. Third, the area is closer to Owego Creek, which also increases the safety risk of children. And fourth, the site is eligible for the National Register of Historic Places (NRHP) as it contains numerous pre-historic artifacts. The additional costs and time delay associated with archeological studies and potential extraction of artifacts could result in considerable expense and delay. This site was deemed not practicable due to concerns regarding the floodplain, student safety, and archeological issues.

Site #3: The State Route 434 site ranked low in the evaluation mainly due to the significant cost associated with preparing the land for new construction. First, the site is narrow and deep with the topography having a 12 percent grade that elevates from the front-to-rear of the site. Preparing the site for development using cut-and-fill techniques to level the ground would cost additional millions of dollars. Second, new turning lanes on the state highway would be required to accommodate access to the site. New York State Department of Transportation (NYSDOT) would require a traffic study that would delay construction time and add significant costs to the project. Third, a large water storage facility would need to be constructed to provide sufficient water and pressure to operate a building-wide fire suppression system. Building the water storage facility would be a significant additional cost. And fourth, the Subgrantee would need to purchase the land from Owego Industrial Development Agency at \$20,000 per acre. Acquisition costs would be between \$200,000 and \$360,000. This site was deemed not practicable due to concerns regarding acquisition and development costs.

### **3.2 Site Alternatives Considered in this EA**

Through the evaluation process, the Subgrantee determined that the original facility site at 1 Christa McAuliffe Lane was the preferred location to construct a replacement facility and to more closely consider the Site #1A and #1B alternatives. The parcel is considered practicable because it is owned by the Subgrantee; exceeds the 10-acre minimum; has existing access to major utilities; and, it is centrally-located in the Village of Owego. The Subgrantee identified Site #1A as the proposed action as compared to Site #1B due to cost considerations. The Subgrantee estimated that the Site #1A cost to rebuild the elementary school (\$24,260,488) was considerably less than Site #1B (\$28,833,008). The \$4,572,520 cost differential between the two alternatives is based on the estimated costs to elevate the facility using fill materials versus using a combination of fill materials and stilts. The Proposed Action Alternative is Site #1A, and the Alternative Action is Site #1B. The No Action Alternative, Proposed Action Alternative, and the Alternative Action are considered further in this EA and are summarized below.

#### **3.2.1 No Action Alternative**

It is anticipated that absent Federal financial assistance, the Subgrantee would not demolish the damaged facility and would not construct the new school facility as described in Section 3.2.2.

Thus as the No Action Alternative, the original facility would remain abandoned and Owego School children would continue to attend Owego Elementary East (L W West) located in Endicott until a future unknown alternate arrangement could be made. This alternative would not address the project's purpose and need.

### **3.2.2 Proposed Action Site #1A**

As the Proposed Action, the Subgrantee would demolish the existing 70,000 square foot facility and construct a new 115,000 square foot facility on the same approximate facility footprint. As a flood damage risk reduction measure, the first floor elevation would be elevated above the 100-year floodplain/BFE and 500-year floodplain elevation through use of fill. The first floor elevation would be approximately 2.5 feet above the 100-year BFE and approximately one foot or more above the 500-year floodplain elevation (Woidt, 2012). The Subgrantee would comply with local floodplain regulations that require an excavated floodplain retention area be provided that is of equal volume to the amount of fill added within the floodplain and used to elevate the new school building. The Subgrantee would to the extent practicable, use fill to be excavated from the mitigation/stormwater management area to elevate the building. Additional fill from a commercial supplier may be required if such fill is found unsuitable for building construction. Any resultant surplus would necessarily be transported off site to a permitted disposal location outside the floodplain. The proposed action would include creating a temporary gravel staging area located where the existing facility is, near George Street (See *Appendix A*, Figure 5, Temporary Staging and Parking Area (Proposed and Alternative Action)). The area of disturbance (AD) would be approximately 12 acres. This alternative would comply with the Village of Owego floodplain ordinance (including volumetric balancing of displaced base floodplain) and National Flood Insurance Program (NFIP) requirements. Refer to *Appendix G*, EO 11988 Eight-Step Review. This alternative would address the project's purpose and need.

### **3.2.3 Alternative Action Site #1B**

As an Alternative Action, the Subgrantee would demolish the existing 70,000 square foot facility and construct a new 115,000 square foot facility on the same approximate facility footprint. Flood damage risk reduction measures would include use of a combination of fill materials and stilts to elevate the facility above the BFE and 500-year floodplain elevation. The pool and gym sections would be built on fill obtained on site and/or commercial suppliers, whereas the remainder of the school classrooms, offices and other rooms would be built on stilts. This alternative would include excavating under the proposed area where stilts would be placed (See *Appendix A*, Alternative Action and Mitigation Area). The stilts and associated excavated mitigation area would provide an area where floodwaters could pass underneath the facility and would compensate for displaced flood storage volume associated with the fill. This alternative would comply with the Village of Owego floodplain ordinance and NFIP requirements. Refer to *Appendix D*, Subgrantee's Environmental Evaluation Documentation, for additional details. This alternative would address the project's purpose and need. As discussed prior, Site #1B alternative was not selected as the proposed action due to cost prohibitive nature of the stilt construction methodology.



## **4.0 Affected Environment and Environmental Consequences**

Potential environmental impacts and proposed mitigation measures associated with the No Action Alternative, the Proposed Action Alternative, and the Alternative Action Alternative are presented in the following sections and are summarized in Table 1 on Page 6.

### **4.1 Topography, Soils, and Geology**

#### **4.1.1 Existing Conditions**

##### **Topography**

The proposed project site is located in Owego Creek river valley. Within the Area of Disturbance (AD), there is approximately less than three to five foot elevation change from the west to east. Ground surface elevation is approximately 815 feet (or less) above mean sea level (amsl). To the east of the project site, East Beecher Hill rises to approximately 1,300 feet amsl and to the west, West Beecher Hill rises to approximately 1,350 feet amsl. Owego Creek's flat river valley bottom gently increases in elevation as it continues upriver from the project site. Approximately 1.5 miles south from the project site, Owego Creek widens and joins the larger Susquehanna River.

##### **Soils**

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service operates the Web Soil Survey, which includes the soils of Tioga County (NRCS USDA, 2013). This project site consists of two soil types; Howard gravelly silt loam (HrB) and Unadilla silt loam (UnA).

##### **Geology**

Executive Order 12699 requires Federal agencies assisting in the financing, through Federal grants or loans, or guaranteeing the financing, through loan or mortgage insurance programs, of newly constructed building to initiate measures to assure appropriate consideration of seismic safety (WBDG, 1990). The United States Geological Survey (USGS) Percent Peak Ground Acceleration Seismic Hazard Maps (USGS, 2008) adopted by the New York State Building Code (NYSBC) indicate that the project site is located within a moderate seismic hazard area, as is most of New York State. The only area in New York State that has a higher hazard is located in the Central Adirondacks and further toward the Canadian border. Since seismic activity is so low within an area categorized as a moderate seismic hazard area, the construction of buildings would not have to meet any higher standards.

#### **4.1.2 Potential Impacts and Proposed Mitigation**

##### **No Action Alternative**

The No Action Alternative would not impact topography, geology, or soils.

##### **Proposed Action**

Significant impacts to soils and topography (ground disturbance) during construction and mitigation activities would be expected for the proposed action. The AD would be approximately 12.0 acres. Six (6) acres would be excavated (i.e., grassy athletic fields) for fill materials and the remaining six acres would be graded before construction.

Table 1 Summary of Potential Environmental Impacts and Mitigation

| Resource   | Potential Impacts  |   |   | Agency/<br>Permits                  | Mitigation  |
|--|--|---|---|-------------------------------------|---|
|  | No Action<br>Alternative   | Proposed Action   | Alternative Action  |                                     |   |
| Topography, Geology and Soils                          | No impact.   | No significant impact. Soil disturbed during construction.  | No significant impact. Soil to be disturbed during construction.  | NYSDEC<br>SPDES                     | Best management practices for erosion and sediment control.   |
| Land Use and Zoning                                    | No impact.   | No impact   | No impact   | Local Floodplain                    |   |
| Water Resources and Water Quality                      | No impact.   | No impact   | No impact   | NYSDEC<br>SPDES                     | Compliance with SWPPP and SPDES.  |
| Wetlands   | No impact.   | No impact.  | No Impact.  |                                     |   |
| Floodplains  | Adverse impact may result if vacant facility remains in floodplain.  | Promotes floodplain occupancy and further development of the 100-year floodplain.   | Promotes floodplain occupancy and further development of the 100-year floodplain.   | Local Floodplain Development Permit | Local floodplain ordinance requires compensatory replacement of the lost flood-volume of any fill placed in the 100-year floodplain. Elevation of structures as flood damage risk reduction measure |
| Vegetation   | No impact.   | No significant impact. Site previously disturbed  | No significant impact. Site previously disturbed  |                                     | Native plant species would be selected for e landscape plantings to the extent practicable in accordance with EO13112.  |
| Wildlife and Fisheries Habitat                         | No impact.   | No impact.  | No impact.  |                                     |   |
| Threatened and Endangered Species and Critical Habitat | No impact.   | No impact.  | No impact.  | NYSDEC NHP                          | Threatened and Endangered Species and Critical Habitat  |
| Cultural Resources                                     | No impact.   | Adverse effect on archaeological resources. Phase II Site investigation of mitigation area findings, the site has sufficient data potential to be eligible for NRHP. Phase III Site investigation recommended Data Recovery Plan required to mitigate adverse effects | No significant impact.  | NYSHPO                              | Potential impacts associated with mitigation area to be mitigated through a Phase III Data Recovery Plan.   |
| Aesthetic and Visual Resources                         | Adverse impact due to vacant facility on site.                       | No impact.  | No impact   |                                     |   |
| Socioeconomic Resources                                | Potential adverse impact associated with total loss of the facility. | Short-term positive impact with construction, long-term net-return to pre-disaster conditions.  | Short-term positive impact with construction, long-term net-return to pre-disaster conditions.  |                                     |   |
| Environmental Justice                                  | No impact.   | No impact.  | No impact.  |                                     |   |
| Air Quality  | No impact.   | Temporary dust and emissions due to construction; no long-term impact to air quality.   | Temporary dust and emissions due to construction; no long-term impact to air quality.   |                                     | Best management practices.  |
| Contaminated Materials                                 | No impact.   | No impact.  | No impact.  | NYSDEC                              | Best management practices.  |
| Noise  | No impact.   | Temporary construction noise; no long-term impact.  | Temporary construction noise; no long-term impact.  |                                     | Compliance with local ordinances and best management practices.   |
| Traffic  | No impact.   | Short-term impact, no long-term impact -return to pre-disaster conditions.  | Short-term impact, no long-term impact -return to pre-disaster conditions.  |                                     | Compliance with local ordinances related to operations on the construction site.  |
| Infrastructure   | No impact.   | No impact.  | No impact.  |                                     |   |
| Public Health and Safety                               | Adverse impact to community with facility                            | Positive impact due to new facility for the affected community.   | Positive impact due to new facility for the affected community.   | NYSDOH                              | Compliance with Federal, State, and local safety standards and codes.   |
| Climate Change   | No impact.   | No impact.  | No impact.  |                                     |   |
| Cumulative Impacts                                     | Adverse impact to community.   | No adverse cumulative impacts. Positive cumulative benefit to the community with the Proposed Action and the anticipated reconstruction of the Owego School Administration Building and Maintenance Facility.   | No adverse cumulative impacts. Positive cumulative benefit to the community with the Proposed Action and the anticipated reconstruction of the Owego School Administration Building and Maintenance Facility. |                                     |   |

There are no forests within the AD. A portion of the excavated area would be developed as a soccer field and the remaining portion (approximately eight acres) would become a stormwater/floodwater mitigation basin, known as the mitigation area. The new facility building, parking areas, and driveways would be elevated approximately four feet above the previous grade to reduce risks from future floods events. There is no proposal to excavate deeper than three to four feet or to discharge any waste on site. No impact to the bedrock or geology would be expected.

The duration of construction would be approximately 18 months. Erosion and sedimentation impacts would be minimized through the implementation of an approved erosion and sediment control plan for construction activities. This stormwater plan would be developed as part of the State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities (GP-0-10-001) for the proposed project, and submitted to the New York State Department of Environmental Conservation (NYSDEC) prior to project construction. Best management practices for soil erosion and sediment control would be established, such as the installation of perimeter silt fences to control the migration of silt from the site. All construction activities are subject to the requirements of the stormwater SPDES General Permit.

### **Alternative Action**

Potential impacts to the soils and topography of the project site would be slightly less than those anticipated from the Proposed Action, as the anticipated volume of fill needed for this alternative would be less. However, the mitigation area would be excavated to almost the same lateral extent as the Proposed Action. This excavation would provide the fill and/or use fill from commercial suppliers and floodwater compensation for the stormwater runoff generated by all the new impervious surfaces. No impact to the bedrock or geology would be anticipated. Accordingly, the site development work would be subject to SPDES requirements as described above.

## **4.2 Land Use and Zoning**

### **4.2.1 Existing Conditions**

The existing facility is located on the northern edge of the Village of Owego, Tioga County, New York. Similar to the rest of the Village, the proposed project site is situated in a narrow river valley of Owego Creek, which joins the much larger Susquehanna River approximately 1.5 miles downstream. Outside the Village and Town of Owego, there is a mixture of farmland, forested areas, and residential development. The proposed site is a wide flat plain adjacent to the Owego Creek bordered on the east by New York State (NYS) Routes 38/96 and a railroad right-of-way and on the west by the Owego Creek. To the north, the property is bordered by open, grassy fields and farm lands in the floodplain of Owego Creek, and on the south, it is bordered by dense residential developments in the Village of Owego.

The Farmland Protection Policy Act requires federal agencies to minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural use and to assess potential conversion of farmland to developed property. The project site is zoned 612 School and is located in an area surrounded by mixed zoning districts, including Industrial, Commercial, and R1, R2 and R4 residential zones. See *Appendix B*, SEQRA Documents, Environmental Assessment Form for additional site details. As the project area, inclusive of all

project alternatives is mapped as “urban” on the Census Bureau Map, by regulation at 7 CFR Part 658.2, development of soils/land in the area would not be subject to the Farmland Protection Policy Act.

#### **4.2.2 Potential Impacts and Proposed Mitigation**

None of the alternatives would impact land use or local zoning. Site was used for elementary school since the 1960s (Refer to *Appendix E*, Phase I – Environmental Site Assessment, for the historical uses of the project site). Implementation of the action alternatives would include excavation of vacant fields for use as fill where the extent is practicable and the construction of a stormwater/floodplain mitigation area. A new soccer field would be created in the stormwater/floodplain mitigation area (See *Appendix A*, Figure 2).

#### **4.3 Water Resources and Water Quality**

Congress enacted the Federal Water Pollution Control Act in 1948 which was reorganized and expanded in 1972 and became known as the Clean Water Act (CWA) in 1977, as amended. The CWA regulates discharge of pollutants into water with sections falling under the jurisdiction of the U.S Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA). Section 404 of the CWA establishes the USACE permit requirements for discharging dredged or fill materials into Waters of the United States and traditional navigable waterways. Under National Pollutant Discharge Elimination System (NPDES), the EPA regulates both point and non-point pollutant sources, including stormwater. Activities that disturb one (1) acre of ground or more are required to apply for an SPDES permit administered in New York through the NYSDEC.

##### **4.3.1 Existing Conditions**

The project site is located on the floor of the narrow river valley of the Owego Creek, approximately 1.5 miles upstream from the broader of the Susquehanna River valley. The project area abuts the east bank of the Owego Creek, which has a low berm along much of this reach of the creek to reduce or minimize flooding onto the adjacent properties. Owego Creek has a drainage basin above the area to be disturbed of approximately 800 km<sup>2</sup>. The project site is located in a generally flat to gently sloping floodplain approximately 250 m wide. Owego Creek is a Class C (T) stream. The “T” standard means that this stream’s highest and best use is for the potential to support trout. In accordance with New York State Environmental Conservation Law, any disturbance to the bed or banks of a stream with trout standards would be prohibited without a permit from the NYSDEC (NYSDEC-Mapper, 2013).

The depth to the high water table in the AD is at least six feet below the surface level and possibly as much as 12 to 20 feet deep. The proposed excavation in the mitigation area would be from three to four feet deep. There would be no treated sanitary wastes discharged into the groundwater. The facility would use the existing municipal sewer system and wastewater treatment plant.

#### **4.3.2 Potential Impacts and Proposed Mitigation**

##### **No Action Alternative**

The No Action Alternative would not impact water resources and water quality.

##### **Proposed Action**

No impact to surface water quality of Owego Creek or Susquehanna River would be anticipated. The stormwater would be controlled to prevent pollutants from entering water sources. No impacts to Owego Creek bed and banks would be expected. A Stormwater Pollution Prevention Plan (SWPPP) is required and must be approved prior to construction, in accordance with the NYS stormwater SPDES General Permit for Construction Activities (GP-0-10-001). No impacts to groundwater quality are anticipated as excavation in the mitigation area would not reach high water table depths and there would be no discharge of sanitary wastes into groundwater.

##### **Alternative Action**

The Alternative Action Alternative would not impact water resources and water quality as described in Proposed Action above. Groundwater quality would not likely be impacted by the installation of stilt footings.

#### **4.4 Wetlands**

Executive Order (EO) 11990 “Wetlands Protection” requires that Federal agencies take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the beneficial effects of wetlands. Compliance with this EO is insured through the process of identifying whether the action would be located within or would potentially affect wetlands. Additionally, wetlands are afforded protection in accordance with Section 404 of the Clean Water Act and the State’s Environmental Conservation Law.

##### **4.4.1 Existing Conditions**

Based on a wetlands review of the proposed project site for the presence of NYS regulated freshwater wetlands conducted at the NYSDEC’s “Environmental Resource Mapper” website; no state regulated wetlands are within the AD. Based on a review of the United States Fish and Wildlife Service’s (USFWS) National Wetlands Inventory (NWI) website; no Federally-regulated wetlands are located within the AD (USFWS-NWI, 2013). However, there are two USFWS identified wetlands located within 500 feet of the AD to the west, PFO1A (Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded) and R2UBH (Riverine, Perennial, Unconsolidated Bottom, Permanently Flooded), Owego Creek.

##### **4.4.2 Potential Impacts and Proposed Mitigation**

None of the project alternatives would have an impact on wetlands.

#### **4.5 Floodplains**

EO 11988 Floodplain Management requires that Federal agencies avoid funding activities that directly or indirectly support occupancy, modification, or development of the 100-year floodplain (BFE) whenever there are practicable alternatives. FEMA uses Flood Insurance Rate

Maps (FIRM) to identify floodplains for the NFIP. Federal actions within the 100-year floodplain, or 500-year floodplain for critical actions, require the Federal agency to conduct an Eight-Step Decision-Making Process. This process, like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA's regulations for conducting Eight-Step processes are contained in 44 CFR Part 9.5.

#### **4.5.1 Existing Conditions**

According to the FIRM (Community Panel Number 36107C0382E, effective April 17, 2012), the existing facility site and both Owego Sites #1A and #1B are entirely located in Zone AE, a special flood hazard area (SFHA), also referred to as the 100-year floodplain. The Proposed Action Alternative and Alternative Action would both require a Village of Owego floodplain development permit.

#### **4.5.2 Potential Impacts and Proposed Mitigation**

##### **No Action Alternative**

The No Action Alternative may have a negative impact on the floodplain if the existing building was not demolished and/or not properly secured such that materials remain that could become floating debris or pollutant releases during future floods or over time in the floodplain.

##### **Proposed Action**

The Proposed Action would promote floodplain occupancy and adversely impact the floodplain due to further development associated with the increase in facility footprint. It was determined through site alternative analysis that the original property location is the only practicable location for the proposed facility. It was determined through the decision-making process that the benefits of the proposed action outweigh the federal investment of taxpayer money into a structure with risk due to floodplain location. Flood damage risk reduction "minimization" measures would involve elevation of the structure on fill so that the first floor elevation would be four feet above the BFE. The Floodplain Ordinance of the Village of Owego requires compensatory replacement of the lost flood-volume of any fill placed in the 100-year floodplain (no net fill approach). The excavation in the mitigation area would create a stormwater basin to hold approximately the same volume of floodwaters lost by the addition of fill. The Subgrantee would to the extent practicable, use fill to be excavated out of the mitigation/stormwater management area to elevate the building. Additional fill from a commercial supplier may be required in the event such fill is found to be unsuitable for building construction. Any resultant surplus would necessarily be transported off site to a permitted disposal location outside the floodplain. The proposed stormwater basin would mitigate potential induced flooding. Refer to *Appendix D* Subgrantee's Environmental Evaluation Documentation and *Appendix G* EO 11988 Eight-Step Review for the engineering plans, report, public notice and the decision-making documentation for further detail of the floodplain management analysis.

##### **Alternative Action**

This alternative has similar impacts as describe above for the Proposed Action; however, differs from the Proposed Action as a section of the school (the pool and gym) would be built on fill and the remainder of the facility (classrooms, offices, etc.) would be built on stilts over the excavated mitigation area. The Subgrantee would comply with local floodplain regulations that require an excavated floodplain retention area be provided that is of equal volume to the amount

of fill added within the floodplain and used to elevate the new school building. The Subgrantee would to the extent practicable, use fill to be excavated out of the mitigation/stormwater management area to elevate the building. Additional fill from a commercial supplier may be required in the event such fill is found to be unsuitable for building construction. The volume of fill needed for a stilted school would be less, reducing the size of excavation needed to provide fill. However, this alternative would require the same volume of stormwater detention as the Proposed Action due to the same square-footage of impervious surfaces proposed and similar runoff rate. As noted in Section 3.0, the cost factor of this alternative led to the decision that the stilt construction methodology was not practicable.

## **4.6 Vegetation**

### **4.6.1 Existing Conditions**

The proposed site is extensively developed with a school building and associated facilities. The site contains mowed lawns and athletic fields, ornamental plantings with few trees scattered along walkways and various locations. On the west side of the property, trees line Owego Creek bank; the trees are located outside the AD.

### **4.6.2 Potential Impacts and Proposed Mitigation**

#### **No Action Alternative**

The No Action Alternative would not impact vegetation.

#### **Proposed Action**

Significant impact to vegetation anticipated. All vegetation within the 12.0 acre construction area would be disturbed during the construction. Half of the acreage that is currently mowed field would be transformed into a mitigation area that would include a vegetated stormwater/flood control basin and a leveled, grassy, soccer field. The other half would be developed as the new elementary school building, parking areas, driveways and staging area. Wherever possible, native plant species would be selected for site landscape seeding and plantings.

Limited woody tree and shrub removal would be anticipated. However, if woody material would be removed, the Subgrantee and its contractor would be required to adhere to quarantine zone protocols for the Emerald Ash Borer (EAB), which is an invasive insect. Invasive insects can devastate the forests of the northeast and it is recommended that communities in the northeast treat or handle wood materials in place to minimize the spread of these non-native insects. Since Tioga County is a EAB quarantine county, it is required that any woody tree and shrub material to be removed for the proposed action be chipped on site to chips of less than one inch in two dimensions or not be transported whole outside the community in order to adhere with EO13112 Invasive Species, Federal regulations at 7 CFR Parts 301.53-1 through 301.53-9 and state regulations at 1 NYCRR Part 141.

#### **Alternative Action**

The AD would be approximately six acres associated with the area to be developed. The proposed mitigation area would be located under the facility, reducing the AD to the previously disturbed areas. Wherever possible, native plant species would be selected for site landscape

seeding and plantings. Limited woody tree and shrub removal would be anticipated. However, if woody material would be removed, the Subgrantee and its contractor would be required to adhere to quarantine zone protocols for the EAB, which is an invasive insect. Invasive insects can devastate the forests of the northeast and it is recommended that communities in the northeast treat or handle wood materials in place to minimize the spread of these non-native insects. Since Tioga County is a EAB quarantine county, it is required that any woody tree and shrub material to be removed for the proposed action be chipped on site to chips of less than one inch in two dimensions or not be transported whole outside the community in order to adhere with EO13112 Invasive Species, Federal regulations at 7 CFR Parts 301.53-1 through 301.53-9 and state regulations at 1 NYCRR Part 141.

## **4.7 Wildlife and Fisheries Habitat**

### **4.7.1 Existing Conditions**

The existing facility and action alternatives site and ADs do not support any sensitive landscape features such as wetlands, streams or water bodies. The sites are previously disturbed and provide little or no suitable habitat for wildlife and birds, such as raccoons, skunks, chipmunks, squirrels, sparrows, wild turkey, whitetail deer, rabbits and passerine birds. There is no sensitive migratory bird habitat at the site. Nearby is the Owego Creek, which is a Class C (T) stream. A Class C (T) means that for this stream, the highest and best use is its potential to support trout. The “T” standard indicates the potential to support trout (but not trout spawning) and is also an indication of the high quality of the freshwater in that stream. However, the stream is sufficiently west of the boundary of the project location and would not be impacted by the proposed action.

### **4.7.2 Potential Impacts and Proposed Mitigation**

None of the alternatives would impact wildlife, birds, and fisheries habitat. The project site consists of a damaged school, manicured lawns, playgrounds, parking lots, and athletic fields and provides little habitat for wildlife. Project would not affect Owego Creek. In accordance with Migratory Bird Treaty Act, FEMA has determined that there would be no significant adverse impact to migratory bird habitat and no take of migratory bird species associated with any of the project alternatives.

## **4.8 Threatened and Endangered Species and Critical Habitat**

The Endangered Species Act (ESA) of 1973 provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead Federal agencies for implementing ESA are USFWS and U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service. The law requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a “taking” of any listed species of endangered fish or wildlife.

### **4.8.1 Existing Conditions**

The USFWS’s Endangered Species Program webpage was reviewed to determine whether any Federally-threatened or endangered species were known to be located at or near the site



(USFWS-Species, 2013). The USFWS website indicated no Federally-listed endangered species located at or near the site (USFWS-Endangered, 2013).

The New York Natural Heritage Program (NHP) was reviewed for potential New York State threatened and endangered species or their habitat within the project site. Correspondence dated October 18, 2012 was received from the NYSDEC (NYSDEC-NHP, 2013)'s Division of Environmental Permits in Region 7, Syracuse, that provided a jurisdictional determination for the site (see *Appendix C*, Correspondence). The NYSDEC letter indicated a sighting of a Spatterdock Darner (*Rhionaeschna mutata*), which is an imperiled dragonfly/damselfly, in a small pond to the southwest of the project site on the opposite side of Owego Creek. The Subgrantee does not own property in that location on the opposite side of Owego Creek. The construction activities would not impact the Creek or the pond on its opposite side. Response received from the NHP on December 14, 2012 indicated that there were also records for three New York State threatened or endangered plants/animals within 0.5 miles from the site: Green Floater (*Lasmigona subviridis*), Blackchin Shiner (*Notropis heterodon*), and Brook Floater (*Alasmidonta varicosa*). The proposed project would not impact these offsite flora and fauna species.

#### **4.8.2 Potential Impacts and Proposed Mitigation**

FEMA has determined that none of the alternatives would affect Federally-listed or state-listed threatened/endangered species or critical habitat.

#### **4.9 Cultural Resources**

Section 106 of the National Historic Preservation Act (NHPA), as amended, and implemented by 36 CFR Part 800 requires Federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on Federal projects that would have an effect on historic properties. These actions must take place prior to the expenditure of Federal funds. Historic properties include districts, buildings, structures, objects, landscapes, archaeological sites and traditional cultural properties that are listed in or eligible for listing in the National Register of Historic Places (NRHP).

The Proposed Action Alternative and Alternative Action would include the construction of the new elementary school, associated parking, driveways and staging area. Flood mitigation areas are proposed in each alternative but in different locations. In compliance with the New York State's Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) Standards (1994 and 2005), the location of the existing facility, proposed flood mitigation area, and the staging area was considered the area of impact for the purpose of conducting the Phase I Archeological Survey (Survey).

##### **4.9.1 Existing Conditions**

#### **Proposed Action**

The total area of the Proposed Action, as reported in the Phase I Cultural Resource Survey conducted by Public Archaeology Facility (PAF) (refer to *Appendix C* for all correspondence associated with the cultural resources of the project site and *Appendix F* for all cultural resource

documentation), involve three distinct areas: 1) the immediate area around the proposed elementary school building; 2) the large flood mitigation area to the northwest of the existing facility; 3) the proposed staging area. The total area for the Proposed Action would be approximately 13.9 acres, which would include the area of the proposed facility, staging area, and flood mitigation area. Because of preexisting knowledge of prehistoric archeological resources being located on the parcel, cultural resource surveys were required.

### **Alternative Action**

The total area of the Alternative Action would only include the approximate 7.7 acres located in the proximity of the existing and proposed facility and staging area.

## **4.9.2 Potential Impacts and Proposed Mitigation**

### **No Action Alternative**

The No Action Alternative would not impact cultural resources.

### **Proposed Action**

Archeological Resources: A Phase I Archeological Survey (Survey) and Phase II Archeological Examination (Examination) took place within the area of potential effect (APE). The purpose of the Survey was to determine the potential for the presence of intact, in-situ cultural material, particularly deeply buried material, within alluvium and colluvium in the APE of the proposed project area. No archeological sites were identified within the elementary school area and staging area by the Survey conducted by PAF. Therefore, no further work was recommended for these site locations. However, an archeological site, referred to as the Owego Elementary School Prehistoric Site (SUBi-3024), was found to be located within the flood mitigation area and was determined to be potentially eligible for the NRHP. The Phase I Survey recommended that if the sensitive archaeological site could not be avoided that further survey investigations be completed.

In accordance with the recommendation, a Phase II Site Examination (Examination) of the mitigation area consisting of close-interval STPs and 2-4 excavation units was conducted. It was determined that the flood mitigation area has sufficient data potential to be eligible for NRHP. As a result, a Phase III Data Recovery Plan (DRP) was recommended for the flood mitigation area if the area could not be avoided.

A DRP outlining the proposed field, analysis, and reporting methods was requested by the Subgrantee. The removal of the prehistoric site would destroy those elements of integrity and research potential for which it is deemed eligible for National Register eligibility. Since impacts to the prehistoric site cannot be avoided, a DRP would mitigate the adverse effect of the undertaking. The Phase III proposed DRP was developed by PAF. The plan would address the following specific topics (a) chronology; (b) subsistence and seasonality; (c) site function; and (c) lithic reduction strategies. Each of the research topics would be integrated into an interpretative model of subsistence and settlement during the Late Archaic period in the Owego Creek valley. This synthesis would specifically address the function of this site within a larger settlement and subsistence and the regional context of the site. Stone tool analysis and an examination of subsistence remains recovered from features area would provide critical information for assessing site function and seasonality. This data would highlight the types of

resources targeted and the range of processing activities occurring at the site. Data on lithic reduction/management systems in operation at the site would provide information about group mobility and the role of the site in the larger settlement system. Data on raw materials utilized at the site would contribute to the understanding of possible lithic exchange networks and regional integration of groups. The DRP would consist of

- field investigation (unit excavation, mechanical stripping of site top soil, and feature excavation);
- analysis (chronology, land use and settlement patterns, technological lithic analysis, functional lithic analysis, feature analysis, intra-site analysis, and regional analysis interpretation); and
- a final report and potentially community outreach project(s).

All artifacts, notes and all other documentation would be curated at the Anthropology Department at Binghamton University. The final report would be filed with the New York State Historic Preservation Officer (SHPO) and in the appropriate local repositories.

According to the Examination, the mitigation area could tentatively be classified as a single-task field camp, which is defined as relatively high-density, short-duration, small site, with a mostly bifacial tool-kit (PAF, 2013). As noted in the DRP, the flood mitigation area “was part of a larger Late Archaic settlement system, which likely included a longer-term residential base-camp, probably near the confluence of Owego Creek and the Susquehanna River” (PAF, 2013). The data recovery of the flood mitigation area would focus on the role of the Owego Elementary School’s flood mitigation area within its contemporary Late Archaic settlement and subsistence system (PAF, 2013).

The Owego Elementary Prehistoric Site was evaluated by FEMA as being eligible for listing in the NRHP. The SHPO agreed with FEMA’s determination that the removal of this site, to provide a space for the flood mitigation area, constituted an “Adverse Effect”. Thus the DRP would be implemented to mitigate the adverse effect. See correspondence dated May 3, 2012 reference number 12PR05046. Pursuant to its responsibilities under 36 CFR Part 800, FEMA consulted with stakeholders to develop a Memorandum of Agreement (MOA). A copy of the MOA has been included in *Appendix F*.

Consultation has consisted of the disaster-wide public notice issued on October 15, 2011 published in the Bingham Sun & Press Bulletin newspapers whereby the general public was notified of, and invited to comment upon, projects that might adversely affect historic properties in their jurisdiction. In addition, FEMA initiated consultation with the Tribal Historic Preservation Officers of the Seneca Nation of Indians, the Cayuga Nation, and the Onondaga Nation. Contact was made via e-mail on March 29, 2013 and by surface mail posted on the same date.

A response was received from Ms. Thane Joyal, Counsel of the Onondaga Nation, dated April 26, 2013. While the type of site is believed to be a single-task field camp which suggests the absence of burials and of sacred archeological objects, the tribal nation requested they be allowed to monitor the DRP and the consulting parties have agreed. Any burials or sacred objects uncovered are subject to relevant NY state law and the National American Graves and

Repatriation Act (NAGPRA). A conference call with consulting parties including the archeologist and the Onondaga Tribal representative was held on May 2, 2013 to discuss the project scope of work and the working relationship.

Standing Structures: Demolition of the existing facility was authorized under FEMA PW 02633. The New York State Historic Preservation Officer (SHPO) was contacted directly and the SHPO responded that the demolition project would have no adverse effect upon cultural resources, in correspondence dated December 21, 2012 reference number 12PR05046.

### **Alternative Action**

Archeological Resources: Within the elementary school parcel and staging area, no archaeological sites were identified in the Phase I Survey completed by PAF. No further work would be recommended because the scope of work for the Alternative Action would include the combination of fill materials and stilts to elevate the facility above the BFE any flood mitigation measures would be at a different location than the one for the Proposed Action.

Standing Structures: As stated above, demolition of the existing facility was authorized under PW 02633. The SHPO was contacted directly and the SHPO responded that the demolition project would have no adverse effect upon cultural resources, in correspondence dated December 21, 2012 reference number 12PR05046.

## **4.10 Aesthetics and Visual Resources**

### **4.10.1 Existing Conditions**

The proposed project site currently consists of the existing facility, associated parking areas, and driveways, and undeveloped athletic fields. Within the AD, the site is a wide flat plain adjacent to the Owego Creek. The site was farmland up to the mid-1960's when it was converted to accommodate the existing elementary school. Refer to *Appendix E*, Phase I – Environmental Site Assessment, for details pertaining to the historical land uses of the project site. The site is bordered on the east by NYS Routes 38/96 and a railroad right-of-way and on the west by the Owego Creek. To the north, it is bordered by open, grassy fields and farm fields in the floodplain of Owego Creek, and on the south, it is bordered by dense residential housing in the Village of Owego. There are no forested areas within the AD.

### **4.10.2 Potential Impacts and Proposed Mitigation**

#### **No Action Alternative**

The No Action Alternative may have a negative impact on aesthetic or visual resources. If the existing facility is abandoned, a deteriorated structure could adversely impact the aesthetic and/or visual resources.

#### **Proposed Action**

No impact to aesthetics and visual resources would be expected. This alternative would expand the square footage of the new facility; however, it would maintain the basic footprint of the existing facility. The first floor elevation would be four feet above the existing BFE through the placement of fill and would increase the overall elevation of the proposed facility.

### **Alternative Action**

No impact to aesthetics and visual resources would be anticipated (see Proposed Action above).

## **4.11 Socioeconomic Resources**

### **4.11.1 Existing Conditions**

According to the U.S. Census Bureau 2010 Population, the population for the Village of Owego was 3,896 persons and Tioga County had a population of 51,125 persons (US Census Bureau, 2013). The total number of households located in the Village is approximately 1,678 whereas the County consists of approximately 22,203 households (US Census Bureau, 2013). The 2010 median income for the Village is consistent with that of County, \$53,093 and \$53,789, respectively (US Census Bureau, 2013).

### **4.11.2 Potential Impacts and Proposed Mitigation**

#### **No Action Alternative**

This alternative would likely have adverse impact on the socioeconomic resources of the Village of Owego. As the existing facility would remain vacant and unusable, employee and community activity at and around the site, including shopping/restaurants/gasoline/other retail would be diminished as compared to prior to Tropical Storm Lee. Elementary aged students would likely continue to attend Owego Elementary East (L W West) in Endicott. The Owego Elementary East may experience overcrowding from the influx of Village of Owego students. The students would continue to travel over 15 miles to Owego Elementary East, would adversely impact the Subgrantee's transportation system (more buses, longer travel, more deterioration to buses due to extra mileage).

#### **Proposed Action**

Short-term positive impact to socioeconomic resources would be anticipated as a result of construction jobs and activity in the area that may support shopping/restaurants/gasoline/hardware & supplies/other retail. The long-term impact would restore pre-storm socioeconomic resources condition within the Village of Owego. Long-term, many former teachers and staff are expected to return to new facility once completed. The Subgrantee would also reduce the costs associated with transporting students to Endicott. Thus, this would be a net-return to the pre-disaster socioeconomic conditions.

### **Alternative Action**

The socioeconomic impacts of the Alternative Action would be anticipated to be the same as the effects describe above for the Proposed Action.

## **4.12 Environmental Justice**

Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations", guides Federal agencies to "make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations" (EPA-EO, 2013).

#### **4.12.1 Existing Conditions**

The EPA Environmental Justice (EJ) Mapper indicated that there are no potentially sensitive EJ communities within the Village of Owego or Tioga County. NYSDEC identified a potential environmental justice area in Owego less than 1,000 feet from the OES site. NYSDEC does not guarantee the accuracy, completeness, or timeliness of the EJ information.

#### **4.12.2 Potential Impacts and Proposed Mitigation**

None of the project alternatives would have disproportionately high or adverse impacts on human health and human environment of minority or low-income populations. There are no low income or minority populations identified for the project area.

### **4.13 Air Quality**

The Federal Clean Air Act requires each state to attain and maintain specified air quality standards. National Ambient Air Quality Standards (NAAQS) have been promulgated by the Federal government and by NYS for carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), total suspended particulate (TSP), sulfur dioxide (SO<sub>2</sub>) and lead (Pb). The New York standards are generally the same as the Federal standards for these pollutants. Primary air quality standards are set to protect human health and secondary standards are set to protect human welfare. The EPA is presently implementing the 2008 ozone standards as required by the Clean Air Act and meeting these standards would provide important public and environmental health benefits.

#### **4.13.1 Existing Conditions**

Tioga County is located in NYSDEC Region 7. As identified on the EPA EJ Mapper, the proposed project is located in an attainment area for Ozone 8-Hour, Lead 2008 Standard, Particulate Matter (PM) 2.5 Annual and PM 2.5 24-Hour Standard.

#### **4.13.2 Potential Impacts and Proposed Mitigation**

##### **No Action Alternative**

The No Action Alternative would not impact to air quality.

##### **Proposed Action**

Temporary impact (18 months) to air quality would be anticipated during demolition and construction activities. Construction activities on the project site may have a potential impact on the local air quality through the generation of fugitive dust or airborne dust. Fugitive dust is generated during ground breaking and excavation activities. Emissions from diesel construction vehicles are also a potential source of air pollution. The use of best management practices (BMP) would help minimize dust and vehicle emissions. Occupational Safety and Health Administration (OSHA) standards would be followed to preserve public health of construction workers and future occupants of the facility. Long-term, the facility would contribute minor increased air quality emissions due to standard operational and utility system usage associated with the larger school building; however, the emissions would be de minimis and the area is in an attainment area for criteria pollutants. The emissions associated with transportation to/from the site would expect to be similar to levels and ambient air quality prior to the disaster incident. The Subgrantee is responsible for any permits or other authorizations required for new facility

construction. OSHA standards shall be followed during construction to avoid adverse impacts to worker health and safety.

### **Alternative Action**

See Proposed Action above for anticipated impacts.

## **4.14 Contaminated Materials**

### **4.14.1 Existing Conditions**

A Phase I Environmental Site Assessment was conducted by Ecological Analysis, LLC on the proposed sites in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Standard Practice E 1527-05 (See *Appendix E*). Ecological Analysis identified asbestos containing building materials, lead based paint, a historic petroleum fuel oil spill, potential mercury containing building components, containers of unknown substances, and small quantity storage of hazardous substances and petroleum products. Ecological Analysis recommends that hazardous substances and petroleum products be removed and managed according to applicable regulatory requirements.

The Phase I Environmental Site Assessment identified only one potential hazardous substance within the vicinity of the project site. A north adjacent property (1 Sheldon Guile Boulevard) contains a double-walled Above Ground Storage Tank. Based on tank construction, topography and location, it is unlikely that this spill would have any impacts on the project site.

### **4.14.2 Potential Impacts and Proposed Mitigation**

None of the alternatives would impact or be impacted by contaminated materials. However, during construction activities, hazardous materials may be present on-site. Best management practices would be used in the event of petroleum or other hazardous material leak. Any spills are required to be reported to NYSDEC. Contractors are responsible for ensuring responsible action on the part of construction personnel. As described in Section 4.15.2, OSHA standards would be adhered to during construction to avoid impacts to public health.

## **4.15 Noise**

The United States Congress' Noise Control Act of 1972 required the EPA to create a noise criteria. In response, the EPA published *Information On Levels Of Environmental Noise Requisite To Protect Public Health and Welfare With An Adequate Margin Of Safety* in 1974 which explains the impact of noise on humans. Noise pollution is in general measured in decibels (dB) which measure the intensity of sound. Day-night average sound level (Ldn) is used to measure the average sound impacts for the purpose of guidance for compatible land use. The EPA report found that the maximum 24-hour Ldn value is 70 dB before causing hearing loss. Maximum outdoor activity interference in a residential neighborhood is 55 dB for Ldn. Maximum indoor activity interference in a residential neighborhood is 45 dB for Ldn.

### **4.15.1 Existing Conditions**

The ambient noise level in the vicinity of the project site is typical for a rural area. The project site is on an existing school complex located on the northern edge of the Village of Owego.

Outside the Village, most of land is farmland or forested areas with pockets of residential development. Vehicle noise is also generated from the nearby NYS Route 38/96 roadway.

#### **4.15.2 Potential Impacts and Proposed Mitigation**

##### **No Action Alternative**

The No Action Alternative would not impact ambient noise levels.

##### **Proposed Action**

Temporary impact (18 months) to ambient noise levels would be anticipated during construction; no long-term impacts would be expected. The Village Noise Ordinance would be adhered to during construction activities.

##### **Alternative Action**

Temporary impact (18 months) to ambient noise levels is anticipated during construction; no long-term impacts are expected (see Proposed Action above).

#### **4.16 Traffic**

##### **4.16.1 Existing Conditions**

From the mid-1960s to September of 2011, the proposed project site, 1 Christa McAuliffe Drive in the Village of Owego, has been used as an elementary school. Since the facility received significant damage from flooding in September 2011, the site has remained abandoned and the building vacant.

##### **4.16.2 Potential Environmental Impacts**

##### **No Action Alternative**

The No Action Alternative would not impact traffic volume.

##### **Proposed Action**

Short-term impact (18 months) to traffic would be anticipated during construction. The presence of construction and delivery vehicles is unavoidable; however, this impact would be short lived and all site construction activities would comply with Village ordinances that relate to operations on a construction site. Post-construction, the traffic volume would increase on roadways leading to the Owego school complex. However, this increase would restore traffic levels to levels similar to pre-flood, September 2011 levels.

##### **Alternative Action**

Short-term impact (18 months) to traffic would be anticipated during construction; no significant adverse long-term impacts would be expected (see Proposed Action above).

#### **4.17 Infrastructure**

##### **4.17.1 Existing Conditions**

The proposed project would construct the new elementary school at the approximate location of the existing facility. All major utilities would be available to Sites #1A and #1B.



The new facility would be expected to use existing infrastructure located on, to, and from the project site.

#### **4.17.2 Potential Impacts and Proposed Mitigation**

None of the project alternatives would have an impact on existing infrastructure.

#### **4.18 Public Health and Safety**

##### **4.18.1 Existing Conditions**

The Village of Owego's public health and safety was negatively impacted by Tropical Storm Lee. The facility experienced extensive flood damage and the facility was rendered as unfit for its intended purpose.

##### **4.18.2 Potential Impacts and Proposed Mitigation**

##### **No Action Alternative**

The No Action Alternative would negatively impact public health and safety. If the existing facility is abandoned and left to deteriorate, public safety may be at risk from harm by trespassers, arsonists, and facility instability. Facility may cause additional problems in future flood events if it collapses, caught fire, loosened from the foundation.

##### **Proposed Action**

The impact on the overall public health and safety would be positive. The return of educational services to the community would increase the public health, safety, and welfare of students. The risk of injuries and harm from transporting students to another community is reduced as students are able to attend classes within their own community.

##### **Alternative Action**

The impact on the overall public health and safety would be positive (see Proposed Action above).

#### **4.19 Climate Change**

According to the EPA, the premise of climate change "...refers to any significant change in the measures of climate lasting for an extended period of time" (EPA, no date). This includes major variations in precipitation, sea surface temperatures and levels, atmospheric temperature, wind patterns, and other variables resulting over several decades or longer. However EPA identifies and regulates anthropogenic or human actions that may affect climate change. This is dubbed "abrupt climate change" which occurs over decades and distinguishes it from natural variability that occurs gradually over centuries or millennia. Embodied energy measures sustainability to account for the energy used by structures or to create materials. Another measure of sustainability is life-cycle or cradle-to-grave analysis which accounts for the extraction, manufacture, distribution, use, and disposal of materials. While resources exist to quantify embodied energy and life cycle analysis, the calculations were not prepared by the Subgrantee for the options presented in this EA.

#### **4.19.1 Existing Conditions**

If climate change exists it could potentially increase temperatures in the northeast United States; could potentially cause more severe weather incidents to occur; and could potentially cause sea levels to rise.

#### **4.19.2 Potential Impacts and Proposed Mitigation**

None of the alternatives would impact or be significantly or uniquely impacted by climate change. The new facility would be constructed in accordance with the New York State Energy Code (NYSEC). The code specifies basic mandatory requirements for newly constructed buildings. Requirements apply to heating and cooling systems, hot water systems, electrical systems, construction materials, equipment specifications and building sealing and insulation. The New York State Energy Research and Development Authority and the Public Service Commission promote compliance with Energy Star® and New York Energy Smart<sup>sm</sup> programs by construction firms, building management firms and homeowners that encourage the use of energy conserving appliances, materials, technologies and building techniques. The Subgrantee could consider design and material options to reduce future energy demand, as well as reduce use of non-renewable resources in accordance with the principles of Leadership in Energy and Environmental Design.

#### **4.20 Cumulative Impacts**

Cumulative effects are defined by the CEQ as the impact on the environment resulting from the incremental impacts of the evaluated actions when combined with other past, present, and reasonably foreseeable future actions, regardless of the source, such as Federal or non-Federal. Cumulative impacts can result from individually minor but collectively significant actions taken over time. Reasonably foreseeable future actions within the community include construction of an Owego School Administrative Building and an Owego School Maintenance & Bus Facility as replacement facilities for those that were flood-damaged during Tropical Storm Lee. The potential impacts from the proposed project (Proposed Action and Alternative Action) and other Owego School facilities would not cumulatively have a significant adverse impact on the human environment. It is anticipated that the both the Owego Elementary School and the Maintenance & Bus Facility would impact the archaeological site and that cumulative impacts would be mitigated through data recovery and potentially educational or interpretive commitments. Restoration of public services would be a positive cumulative benefit to the community with the Proposed Action and the anticipated reconstruction of the Owego School Administration Building.

### **5.0 Permits and Project Conditions**

The Subgrantee is responsible to obtain all applicable Federal, state, and local permits for project implementation prior to construction, and to adhere to all permit conditions. The Subgrantee has already completed a New York State Environmental Quality Review Act (SEQRA) documentation process with forms provided in *Appendix B*. Any substantive change to the approved scope of work will require re-evaluation by FEMA for compliance with NEPA and other laws and executive orders. The Subgrantee must also adhere to the following conditions

during project implementation. Failure to comply with these conditions may jeopardize Federal funds:

1. The new facility and facility site egress must be elevated or flood-proofed to at/above the 100-year floodplain utilizing the Best Available Data (*Flood Insurance Rate Map Community-Panel Number 36107C0382E dated April 17, 2012*) in accordance with the National Flood Insurance Program and 44 CFR Part 9.
2. The proposed construction in the floodplain will need to be coordinated with the local floodplain administrator and must comply with Federal, state, and local floodplain laws and regulations.
3. Excavated soil and waste materials will be managed and disposed of in accordance with applicable Federal, state, and local regulations.
4. The Subgrantee shall be responsible to comply with the NYSDEC State Pollutant Discharge Elimination System (SPDES) permit for Stormwater Discharge from Construction Activity or other applicable SPDES permit, in accordance with NYS Environmental Conservation Law. If the NYSDEC General Permit for Stormwater Discharges is determined to cover the proposed action, the Subgrantee shall provide NYSOEM/FEMA a copy of the Stormwater Pollution Prevention Plan (SWPPP) and a copy of the Notice of Intent Form at grant project close-out or other time identified by NYSOEM/FEMA Grant Programs Directorate per grant administrative documentation guidance requirements. If an individual SPDES permit is determined to be required, the Subgrantee shall provide a copy of the obtained permit, as well as supporting SWPPP to NYSOEM/FEMA at grant project close-out or other time identified by NYSOEM/FEMA Grant Program per grant administrative documentation guidance requirements. For more information regarding SPDES, visit <http://www.dec.ny.gov/chemical/43133.html>. It is expected that the Subgrantee and its construction contractor(s) will conduct construction utilizing best management practices to limit noise, dust and sedimentation & erosion during construction.
5. The construction and installation of any sanitary sewer and/or septic tank and leach field will need to be coordinated with the Tioga County Health Department.
6. In the event that unmarked graves, burials, human remains, or archaeological deposits are uncovered, the Subgrantee and its contractors will immediately halt construction activities in the vicinity of the discovery, secure the site, and take reasonable measures to avoid or minimize harm to the finds. The Subgrantee will inform the NYSOEM, SHPO and FEMA immediately. The Subgrantee must secure all archaeological findings and shall restrict access to the area. Work in sensitive areas may not resume until consultations are completed or until an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards determines the extent and historical significance of the discovery. Work may not resume at or around the delineated archaeological deposit until the Subgrantee is notified by NYSOEM.
7. Tioga County is currently identified as a quarantine zone for the invasive insect Emerald Ash Borer (EAB). Since the proposed project is located in EAB quarantine county, it is required that any woody tree and shrub material to be removed for the proposed action be chipped on site to chips of less than one inch in two dimensions or not be transported whole outside the community in order to adhere with EO13112 Invasive Species, Federal regulations at 7 CFR Part 301.53-1 through 301.53-9 and state regulations at 1 NYCRR Part 141. Invasive insects can devastate the forests of the northeast and it is recommended that

communities in the northeast treat or handle wood materials in place to minimize the spread of these non-native insects. For more information concerning this environmental stewardship requirement, visit USDA-APHIS, New York State Department of Agriculture and Markets, and other websites concerning EAB:

- [www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/emerald\\_ash\\_b/](http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/)
  - [www.agriculture.ny.gov/PI/eab.html](http://www.agriculture.ny.gov/PI/eab.html)
  - [www.nyis.info/?action=news\\_detail&event\\_id=306](http://www.nyis.info/?action=news_detail&event_id=306)
8. Occupational Safety and Health Administration (OSHA) standards shall be followed during construction to avoid adverse impacts to worker health and safety.
  9. It is recommended that the Subgrantee restore disturbed construction areas of the site with native seed and/or plant species to minimize soil erosion and sedimentation, as well as enhance environmental habitat quality of project area. It is recommended that disturbed soil areas be planted with native plant material, as soon as practicable after exposure, to avoid or minimize growth of undesired and potentially invasive plant species that can potentially take hold without competition of native plant materials. Local landscape plant nurseries and soil conservation offices can assist with identification of suitable native plants for site location type. The following websites may also be useful to identification of native plant material for the proposed project site:
    - <http://plants.usda.gov/java/>
    - [www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/plants/](http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/plants/)
    - [www.fs.fed.us/wildflowers/nativeplantmaterials/rightmaterials.shtml](http://www.fs.fed.us/wildflowers/nativeplantmaterials/rightmaterials.shtml)
  10. Subgrantee shall not initiate construction activities until fifteen (15) days after the date that the Finding of No Significant Impact (FONSI) has been signed as “APPROVED.”

## **6.0 Public Involvement**

In accordance with NEPA, this Environmental Assessment (EA) will be released for a 15-day public review and comment period. Availability of the document for comment will be advertised in the Binghamton Press & Sun Bulletin newspapers. A hard copy of the EA will be available for review at the Village of Owego’s Village Clerk’s Office at 178 Main Street, Owego, New York 13827. An electronic copy of the EA is available for download from the FEMA website at [www.fema.gov](http://www.fema.gov). This EA reflects the evaluation and assessment of the Federal government, the decision-maker for the Federal action; however, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. The public is invited to submit written comments by mail to FEMA, Office of Environmental Planning & Historic Preservation, Leo O’Brien Federal Building, 11A Clinton Avenue, Suite 742, Albany, New York 12207, or E-mail to: [FEMA4020-4031Comment@fema.dhs.gov](mailto:FEMA4020-4031Comment@fema.dhs.gov).

The EA evaluation resulted in the identification of no unmitigated significant impacts to the human environment. Obtaining and implementing permit requirements along with appropriate best management practices would avoid or minimize potential adverse effects associated with the three alternatives considered in this EA to below the level of a significant impact. Substantive comments received will be evaluated and addressed as part of Final Environmental Assessment documentation prior to the anticipated issuance of a Finding of No Significant Impact (FONSI) by FEMA.

Copies of the EA will be sent to:

NYSOEM  
1220 Washington Avenue,  
Suite 101, Building 22  
Albany, NY 12226-2251

NYSDEC Region 7  
Cortland Sub-office  
1285 Fisher Avenue  
Cortland, NY 13045

The following will receive notice of the Environmental Assessment's availability:

Mr. John Bonafide  
New York State Office of Parks, Recreation and Historic Preservation  
Peebles Island, PO Box 189 Waterford, NY 12188-0189

Mr. Anthony Gonyea, Faithkeeper  
RR#1, Route 11A  
Box 319B  
Nedrow, New York 13120

## **7.0 Conclusion**

FEMA through NEPA, and the Subgrantee through the State Environmental Quality Review Act (SEQRA) process, have found that the Proposed Action to construct the Owego Elementary School at the 1 Christa McAuliffe Drive, which is the Subgrantee's preferred alternative, is a practicable alternative that would not significantly adversely impact the human environment. As discussed in Section 4.9.2, the proposed action would adversely impact the Owego Elementary Prehistoric Site due to proposed excavation for the flood mitigation area. It was determined that the impacts to the archaeological resources could not be avoided and would be mitigated through a Phase III data recovery investigation and other commitments to resolve adverse effects coordinated through the Memorandum of Agreement (MOA) consultation process.

During the construction period, short-term impacts to soils, surface water, transportation, air quality, and noise are anticipated. Short-term impacts would be mitigated utilizing best management practices, such as silt fences, proper equipment maintenance, and appropriate signage. Environmental impacts of construction would also be minimized per adherence to any required Stormwater Pollution Prevention Plan (SWPPP), adherence to invasive insect quarantine protocols and compliance with building and floodplain development permit requirements. The long-term environmental impacts to soils, topography, vegetation, and the floodplain as a result of the new elementary school construction are outweighed by the positive impacts that the new elementary school would have for the Village of Owego.

## 8.0 List of Preparers

Ecological Analysis, LLC., 633 Route 211 East, Suite 4, Middletown, New York 10941

FEMA Region II, 26 Federal Plaza, New York, New York 10278

## 9.0 References

Cooperative Soil Survey. (2013). *Tioga County*. Retrieved [www.soilsurvey.org/index.asp](http://www.soilsurvey.org/index.asp).

Environmental Protection Agency. (No Date). *Environmental justice view*. Retrieved [www.epa.gov](http://www.epa.gov)

Environmental Protection Agency. (1994). *Executive Order 12898, entitled "Federal actions to address environmental justice in minority populations and low-income populations"*. Retrieved [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice).

Environmental Protection Agency. (2008). *Area designations for 2008 ground-level ozone standards*. Retrieved [www.epa.gov](http://www.epa.gov)

Federal Emergency Management Agency. (2010). *Executive Order 11988: Floodplain management*. Retrieved [www.fema.gov/plan/ehp/ehplaws/eo11988.shtm](http://www.fema.gov/plan/ehp/ehplaws/eo11988.shtm)

Federal Emergency Management Agency. (No Date). *FEMA Map Service Center*. Retrieved [msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1](http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1)

National Environmental Policy Act. (1999). *Executive Order 13112: Invasive Species*. Retrieved <http://ceq.hss.doe.gov/nepa/regs/eos/eo13112.html>

New York State Department of Environmental Conservation. (2008). *Environmental Resource Mapper*. Retrieved [www.dec.ny.gov/animals/38801.html](http://www.dec.ny.gov/animals/38801.html).

New York State Department of Environmental Conservation. (No Date). *New York Natural Heritage Program: State threatened and endangered species*. Retrieved [www.dec.ny.gov/imsmaps/ERM/viewer.htm](http://www.dec.ny.gov/imsmaps/ERM/viewer.htm).

New York State Department of Environmental Conservation. (2010). *State pollutant discharge elimination system (SPDES) general permit for construction activities (GP-0-10-001)*. Retrieved [www.dec.ny.gov/docs/water\\_pdf/gpsconspmt10.pdf](http://www.dec.ny.gov/docs/water_pdf/gpsconspmt10.pdf)

Public Archeology Facility. (2013). *"Data recovery plan Owego Elementary School prehistoric site (SUBi-3024) Flood Mitigation Area."* February 5, 2013.

Whole Building Design Guide. (1990). *Executive Order 12699: Seismic safety at National Institute of Building Sciences*. Retrieved [www.wbdg.org/ccb/FED/FMEO/eo12699.pdf](http://www.wbdg.org/ccb/FED/FMEO/eo12699.pdf).

Woidt Engineering and Consulting, P.C. (2012). *Owego Creek hydrologic and hydraulic study for proposed replacement of Owego School District Elementary School*. November 27, 2012.

United States Department of Agriculture. (2012). National Agricultural Statistics Service Natural Resources Conservation Services' *Web Soils Survey*. Retrieved [websoilsurvey.nrcs.usda.gov/app](http://websoilsurvey.nrcs.usda.gov/app)

United States Department of Environmental Protection Agency. (No Date). *Climate Change*. Retrieved <http://www.epa.gov/climatechange/>

United States Fish and Wildlife Service. (No Date). *Endangered species program*. Retrieved [www.fws.gov/endangered](http://www.fws.gov/endangered)

United States Fish and Wildlife Service. (1977). National Environmental Policy Act (NEPA) Reference Handbook. *Executive Order 11990: Wetlands Protection*. Retrieved [www.fws.gov/r9esnepa/NEPA\\_Handbook/EO\\_11990.pdf](http://www.fws.gov/r9esnepa/NEPA_Handbook/EO_11990.pdf)

United States Fish and Wildlife Service. (No Date). *National Wetlands Inventory (NWI)*. Retrieved [www.fws.gov/wetlands/](http://www.fws.gov/wetlands/)

United States Fish and Wildlife Service. (2005). *Federally Threatened and Endangered Species*. Retrieved [www.fws.gov/northeast/nyfo/es/list.htm](http://www.fws.gov/northeast/nyfo/es/list.htm)

United States Census Bureau. (2010). *2010 Population Finder*. Retrieved [www.census.gov](http://www.census.gov).